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rosy flesh tint, made with scarlet vermilion, Naples yellow and white. The purple species is light and warm, requiring mauve, rose madder, Naples yellow and white. Gray must be well diffused over it, to give the airy delicacy that is characteristic.

Any time during the summer we may come upon a pretty cluster of cone flowers, or black-eyed susans (*Rudbeckia hirta*), one of the most brilliant of ray flowers, the dark, rich brown of the cone-shaped disk contrasting with the deep gold setting. A simple group of these flowers, with a few undefined grass blades added to the rather scanty foliage, will always make a pleasing study. A few strong flowers may come close together near the centre, one or two rise pretty high, and again one or two more may droop low and toward the light, while several on the shadow side may recede and show only neutral effects. Strong cast shadows are wanted, as the general coloring is strong. It is best to make a circle for the base of a cone, then lay in the rays, or whatever of them may be seen; they are never straight or perfectly flat, but more or less curved; and very near the disk they are somewhat folded and also have a deeper glow of color. Cadmiums are the best yellows to use, with burnt umber in the shades. Vandyck brown is needed for the dark parts of the cones, raw Sienna for the diffused light, and Naples yellow for the high light. Some Sienna and umber tints should be introduced rather emphatically among the stems and grasses.

The great blue lobelia (*L. syphilitica*) is very common in wet meadows and in the neighborhood of streams. It wants either permanent or new blue—rarely the blue pales into pure white; where the slightest purple shows, as it often does, a little rose madder may be added. The plant is very pretty in water-colors, and may be used for good-sized decorations, as it grows to the height of three or four feet.

Another flower that requires much the same blue as the above, is the harebell (*Campanula rotundifolia*). It may be found in any of the mountainous regions of the North. The dainty, nodding flowers and linear stem-leaves are very desirable for small water-color decorations; the round root-leaves, to which the name refers, disappear as soon as the flowers bloom.

The purple foxglove (*Gerardia purpurea*) grows in the North about one foot high, and its flowers are not usually more than an inch in length, where, in the South, the stems attain a height of four feet or more, and the flowers are two inches in length. Rose madder and French ultramarine will give their bright purple, if laid upon white paper in water-colors, or mixed with white in oils—yellow ochre may be worked in the same for the gray tints, and black may be added for the shadows—those of the deep funnel-like centres of the corollas being very delicate. The stems branch considerably, and their linear leaves give a pretty foliage effect.

Plants that are rather frail and vague of themselves, but often introduced for the sake of their soft, mist-like effects, are the bedstraws (*Galiums*). The white flowers are so fine and scattered upon the tall branching stems that they scarcely appear like flowers at all, but rather like brisk wafts of spray. The effect is not easy to produce in water-colors except by using Chinese white; but in oils a broad bristle brush charged with white, a little raw Sienna and a little terre verte, will soon bring it out in perfection. A good-sized study of bedstraw will be found valuable to keep on hand, that branches may be copied in with flowers whose foliage is rather limited.

The *Sabatia chloroides* strews its bright pink flowers around the borders of many large ponds. The general effect at a distance is not very unlike what masses of wild roses would produce if they did not grow high. The structure of the flowers is very different, and the leaves are simple—oblong-lanceolate. If a considerable number of the plants should be painted in a study, it is best to let them spread themselves horizontally; if practicable let them be represented as growing, with a glimpse of water-view beyond and sedge-like greens falling in around the fair pink bloom. The corollas want rose madder and white, with terre verte worked in for the grays, lemon yellow at the base of each petal, and cadmium for the stamens. The flowers group themselves so prettily that one can usually take them as they are, without bringing imagination to aid, and if they do not make a beautiful study it will not be their fault.

The round-leaved sundew (*Drosera rotundifolia*) is a curious and beautiful little plant suited best to dainty rendering in water-colors. The flowers are inconspicuous, but the tufts of leaves, all set round as they are

with fine reddish bristles, make warm little studies that are quite matchless. The greens should be used sparingly, and should be of rather a transparent character. Indian yellow and a very little Antwerp blue will give their general tint; burnt Sienna, with rose and brown madder, may be used for the bristles.

Barberry (*Berberis vulgaris*) is a shrub that we do not often find growing wild except rather near the coast in the Eastern States. Its thick hanging clusters of yellow flowers appear early in the summer, and are very pretty; but the oblong berries that succeed them are much more valued. As the summer advances, they increase in size, and gradually change from green to yellow, then to orange, and finally to the brightest coral. Whatever way the branches may be turned, the berries droop by their own weight like so many pendent jewels. This must be recognized in sketching them. Each slender stem from which a cluster hangs must have a perfect curve, showing that it is pulled over by its rich burden. Barberry may be used for large or small decorations, and water-colors or oils suit it equally well. Dark cast shadows help to show off the coloring of the berries, and throw out the leafy branches. Just before the berries are perfectly mature, they are the prettiest; as the coral surfaces are not then of one deep shade, they will bear cadmiums blended in scarlet vermilion and rose madder, the terminal ones usually being the lighter. Their high lights will be pale yellow or white, and terre verte may be introduced where it is wanted to unite with the red to produce gray tones. The little blossom ends want touches of burnt umber. The leaves do not require very strong greens, and some may be tipped out with Siennas and brown madder. Beautiful as barberry is for decorations, it has not as yet been used enough to lose its novelty; and it can never fail to be pleasing when it is well painted.

This completes the list of wild flowers selected for the year—later specimens having been taken up in September, 1888.

H. C. GASKIN.

A SERIES of very useful lessons in form can be given with a pair of hemispherical bowls, an upright glass or open jar, a wine-glass and a lump of modelling clay. In the two bowls pressed one against the other on a lump of the clay, one can make a sphere; the upright jar will turn out a cylinder, and the wine-glass a cone. Being in soft clay, all sorts of sections can be made with a kitchen knife or a bit of thread. Cubes and other plane-surfaced bodies may be had by flattening the clay against the table. The elements of sectional drawing may most easily be explained by means of these models.

A VERY handy mirror, useful for various purposes in the studio and out-of-doors, may be made by simply coating a piece of glass of any required shape or size on the back with black paint or thick varnish. Objects seen in this mirror have the effect of the same seen with half-closed eyes, the method usually taken to get a notion of the masses apart from the detail of a view. But the image in the black mirror has the advantage of being constant, and of presenting more definite contours than that seen with half-closed eyes. In the studio, the black mirror may be used in inventing ornaments by symmetrically repeating any assemblage of lines placed on the table before one, the mirror being held at right angles to it. With two such mirrors held together by a band of linen glued on to the edges, so that they may be opened or shut like a book, you have a new and very useful form of kaleidoscope. Set end down and opened at right angles, on a line drawing laid flat on the table, it will produce, as you shift it around, the most astonishing variety of rosettes, all perfectly regular, with four leaves or petals to each. By widening the angle you may obtain triangular rosettes of three petals each, and by making an acute angle rosettes of more and more compartments as the angle becomes more and more acute. Fixed at an angle of forty-five degrees, they will serve for a window mirror to show you what is going on in the street.

It is well worth remembering that a sheet of paper doubled and creased with the thumb-nail makes a perfect rule, which may be used to test the rules of box-wood or brass which one buys. Double the paper again, bring the two straight edges together, and crease it as before, and you have a perfect right angle or "square."

To draw on glass, give it first a light coat of essence of turpentine, and use a lithographic crayon well pointed.

China Painting.

A LESSON ON TINTING OR GROUNDING.

FOR a surface the size of an ordinary tea-plate, squeeze upon the palette a portion of any desired color about the size of a marrowfat pea. Add three drops of prepared painting and tinting oil, or balsam copaiba, or fat oil of turpentine, or, for a very delicate tint, simply oil of lavender. I give you all these ways, but the first is my own preference. Some painters use rectified spirits of tar in small quantity, and thin with lavender oil, using no turpentine at all. The color is thus kept open longer, but there is a disagreeable stickiness about the whole process. The tint will look very smooth, however, and this method may prove the easiest in the beginning.

Apple green and the various yellows need no additional flux for tinting; but all the other colors require one-third as much flux as color. The colors designated in catalogues as "tinting or grounding colors" differ from the others only in the fact that they are prepared with a larger admixture of flux. Flux may be used with them in the usual way if desired, and all colors can be used for tinting when this suitable admixture is provided for.

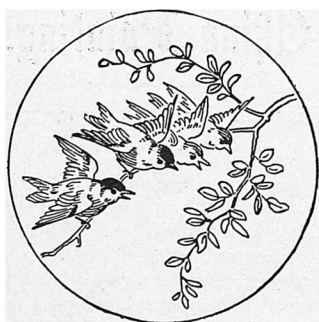
Now grind your color, flux and oil together, and add a few drops of turpentine. Have a "Deerfoot" blender, which is the "tinting brush," ready for use. In applying it to the china, this brush must be held upright, its surface touching the china rather lightly. The motion is very much such as you would use in dabbing a baby's delicate cheek with powder. "Padding"—as the process is also called—is sometimes done with small wads of raw cotton tied up in square pieces of china silk, old cotton or linen. Whether these wads are used, or brushes, it is a luxury in tinting several dishes at a time, or in using several colors for clouded tints, to have a number of clean ones at hand. The "Fitch Hair Stipplers," in the larger sizes, answer very well in place of the Deerfoot blenders, which they closely resemble.

The color, being properly mixed and well thinned with turpentine, should be laid on the china as quickly as possible with the grounding brush, a short quill-handled tool with a rounding end. You need not always color every particle of the surface in applying a tint with the grounding brush, but work quickly and lay the color as evenly as you can with convenience—then immediately take the plate on the palm of your left hand, leaving the right hand free to use the tinting brush, or the little cotton wad, which must not be too hard. This brush, or wad, being perfectly clean and dry, must be held upright and used to *dab* the surface of the plate. Work in successive circles or rounds of touches from the outer edge of the plate to its centre, and when this point is reached go back to the edge and do it all over again. Repeat this process without pause five or six times, perhaps, or until the tint looks perfectly smooth and uniform. If your proportions of oil, turpentine and paint happen to be in perfect harmony when your grounding brush lays the color on, a very few touches of the blender or stippler will often complete the work to perfection.

If you have added too much turpentine the tint will look very watery, and will begin to come off under the use of the blender. In this case wait a few minutes till the color has begun to "set" or thicken a little, when you can generally complete the work with entire success. Delicate tints always have a watery look as the grounding brush lays them on; but it is the blending brush which informs you if they really are too thin, in which case the white surface of the china will show.

Lavender oil can always be used to thin color, either in tinting or in ordinary painting, but the incautious use of heavier oils will often cause the work to blister in firing.

The blending brush, if used too heavily, will take a tint completely off. The motion should be light but firm. In making the first round or two, do not stop too long to work over any one spot, but leave it till the next general round. As soon as the tint looks uniform and of a fine grain, it is done; then put it instantly away from the dust in a box or drawer, and the next day it will be dry enough to handle. It can be dried at once, if necessary, over the smokeless flame of an alcohol



lamp, in the fire-pot of a gas kiln, or in the oven of a kitchen stove.

If the tint should settle in clouds or blotches that obstinately refuse to soften under the blender, the paint has probably become too dry, and you must patiently rub it off and do the work over.

If you are so unlucky as to mar the tint by any careless touch when it is newly painted, dance a blender right over the place at once before the paint has time to dry. This is the only remedy, unless the piece can be fired twice.

If you wish a tint of a rich, deep tone of any color, the only proper way to obtain it in over-glaze painting, is to lay the usual light tint, fire, superadd another light tint of the same style and refire. By repeating this process you can obtain a tint dark as desired and free from all streakiness. Very beautiful rich, clouded tints can be laid in a different way for one firing, and delicate tints can be beautifully clouded also. On any dish to be tinted the design should be sketched in water-color or India ink. This drawing will remain uninjured even if it should be necessary to wash the tint off once or twice with turpentine. When the tint has become dry it can be scraped away from the drawing with a penknife or removed by an easier process.

F. E. HALL.

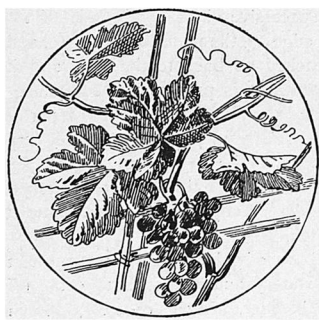
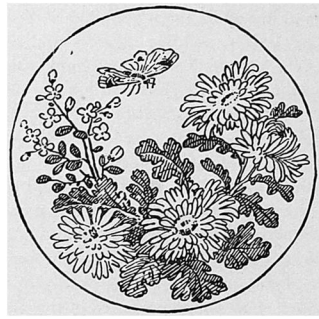
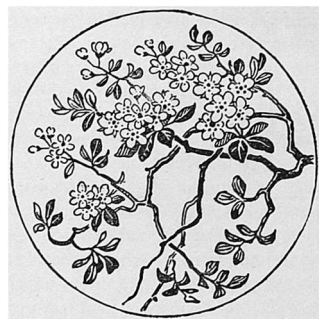
HOW TO PREPARE CHINA FOR FIRING.

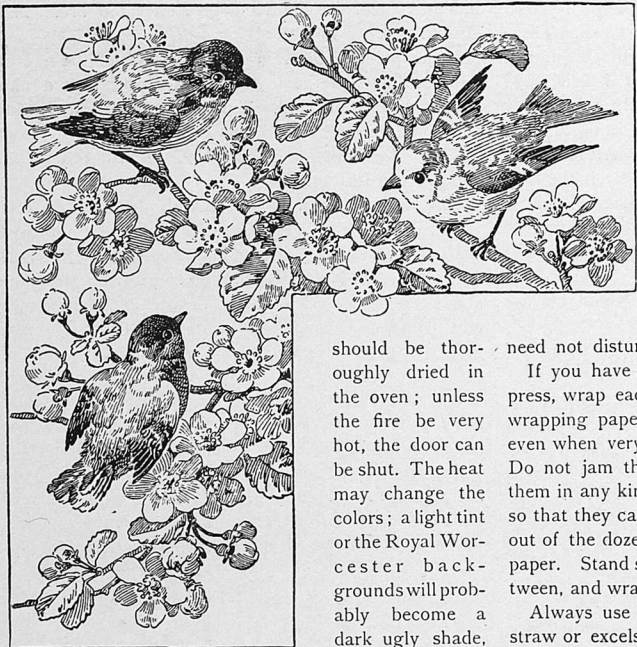
In many cases when china is sent by express to be fired, it is well packed, and reaches its destination in safety, but very often it arrives in such bad condition that it is not fit to be fired. A firer careful of his reputation will inform the owner of the articles that they are not perfect, and wait for instructions. Generally he is requested to remedy the evil, of course at the owner's expense; but that cannot be satisfactorily done, for it is not an easy matter to patch up tinting, add half a leaf or remove scratches from a flower, and have the article look as well as when it left the painter's hands.

Often the under sides of saucers, and sometimes the right sides, are covered with soiled finger-marks and unsightly daubs of paint which the decorator thoughtlessly leaves on, or perhaps deliberately leaves on, hoping they will disappear in the firing, or trusting that the firer will be good-natured enough to wipe them off, not realizing that the man's time is worth money, and that if he should stop to clean all the pieces that are sent to him he would foot up a serious loss at the end of the year. If he charges for his labor he will probably be told that his prices are very much higher than those of Mr. So-and-So of Boston, or some other place. If he fires them as he finds them, he will be sure to hear from the owner, and in some cases will actually be accused of getting those spots on in the kiln.

In view of these difficulties, and many others too numerous to mention, I have thought that it would not be amiss to give a few simple directions for preparing china for the kiln.

If it be necessary to send china away to be fired, it





Painted in a class room, and is to be sent directly to the firer, without an opportunity to dry it, it should be wrapped in plenty of cotton-batting and thin paper. The cotton will stick to the surface of the paint, but that

need not disturb you; it will all disappear in the firing.

If you have a dozen cups and saucers to send by express, wrap each cup in soft paper. Newspaper or stiff wrapping paper is too harsh, and will scratch the paint even when very dry. Put four cups inside each other. Do not jam them in, or they may break. Then wrap them in any kind of a paper and tie firmly with a string, so that they cannot come apart. Make three packages out of the dozen. Do up the saucers separately in soft paper. Stand six together, with plenty of soft paper between, and wrap them round with a strong paper and tie.

Always use a wooden box. Put in plenty of paper, straw or excelsior. The latter, which is the best thing

while the carmines will look like yellow brown. But no harm is done; they will be all right when fired. It is a good plan to stand cups, vases or any article difficult to handle, on a plate or platter that can be easily removed from the oven and placed on a table till cool. It is better to put the china on the slide when the size will permit than on the bottom.

Many decorators, in order to draw directly on the china with a lead-pencil, wash it over with a thin coat of turpentine. Although it dries immediately, it makes rather a sticky background to work on. Paint from the fingers will quickly be transferred to it, and unless it be carefully wiped off after the painting is finished it will make an ugly stain that can only be removed with acid. Turpentine should never be used in this way when liquid bright gold is to be applied.

The slightest smear from this gold, that is almost imperceptible to the eye, becomes a purple stain when fired. After using this gold, the article should be held in a strong light, and if in any place there seems to be the slightest film on the china, do not deceive yourself and say it is nothing; for when it comes from the kiln that place will have a dull purple instead of a clean white surface. Never dry this gold in the oven or by artificial heat; it does not fire so well as it otherwise would. If it be used in a design with paint, dry the color and then put on the gold. Neither turpentine nor alcohol can be trusted to remove these stains, as in the case of paint. Nothing but water will touch it. Moisten

a cloth or stick, as the case may demand, and wipe until the surface of the china is clear and dry.

An alcohol lamp is often used to dry china; but great care must be taken not to let it heat unevenly or the china will break. The flame should be passed rapidly over the entire surface. This is a very convenient method when an oven is not accessible. Do not let the flame touch the paint or it will set it on fire.

In case a piece is

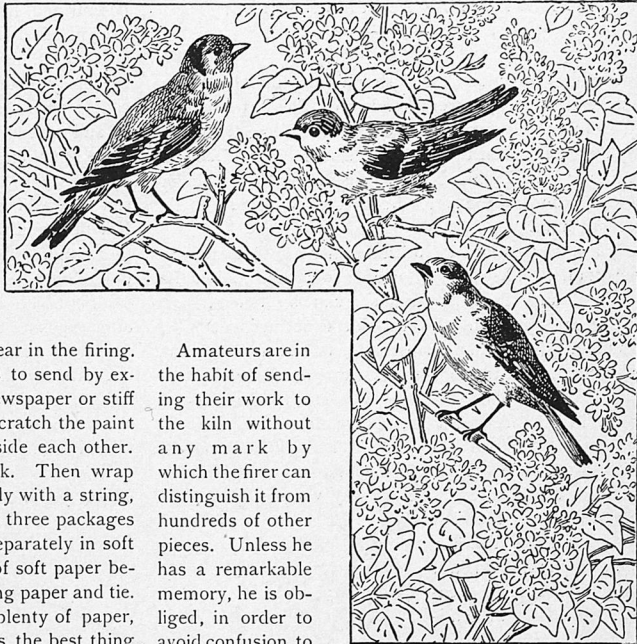
to use, can be bought of any furniture dealer; put plenty of whatever packing material is used at the bottom of the box and sides. Pack the bundles so that they will not touch each other or the box, and so firmly that they cannot move, and they will travel any distance without injury. Always have the packing perfectly dry. If it is damp the paint will absorb the moisture, and it may do harm, especially to some kinds of gold.

If, fortunately, you live near a kiln and can deliver your own china, observe the same rules with regard to



drying in the oven and wrapping in soft paper, even if the case is to be carried only a few blocks. If a number of pieces are placed in a box or basket without protection from each other, some unforeseen jar may throw them together and cause serious mischief.

In case gold edges are to be put on by the firer, the paint should be removed when tinting has been used. It can easily be done by placing a clean cloth moistened in alcohol over the forefinger of the right hand, and holding the article in the left hand and moving the edge slowly against the under side of the finger-nail. If you take off a wide line, it will cost more to gild it. There is a regular price for narrow bands; any wider ones are extra.



Amateurs are in the habit of sending their work to the kiln without any mark by which the firer can distinguish it from hundreds of other pieces. Unless he has a remarkable memory, he is obliged, in order to avoid confusion, to mark them himself.

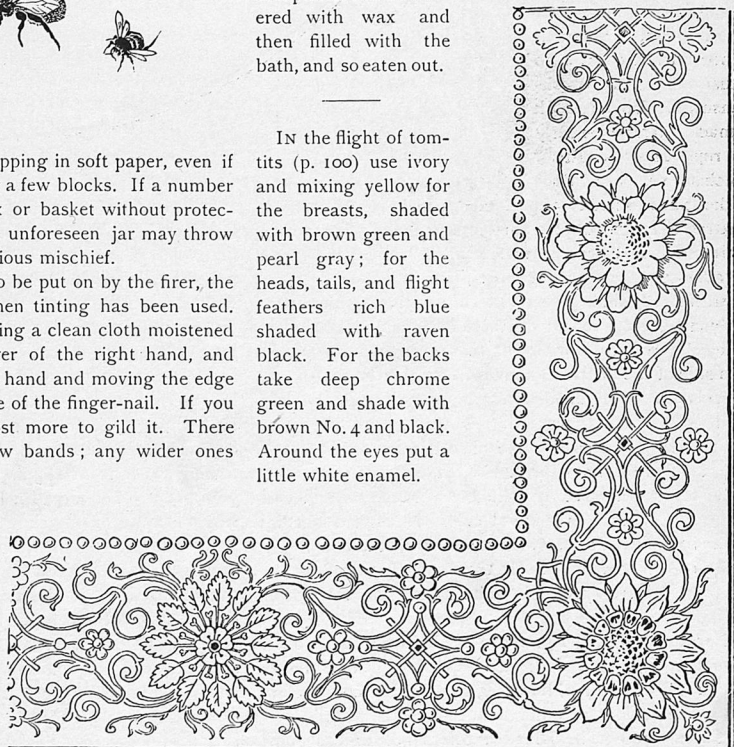
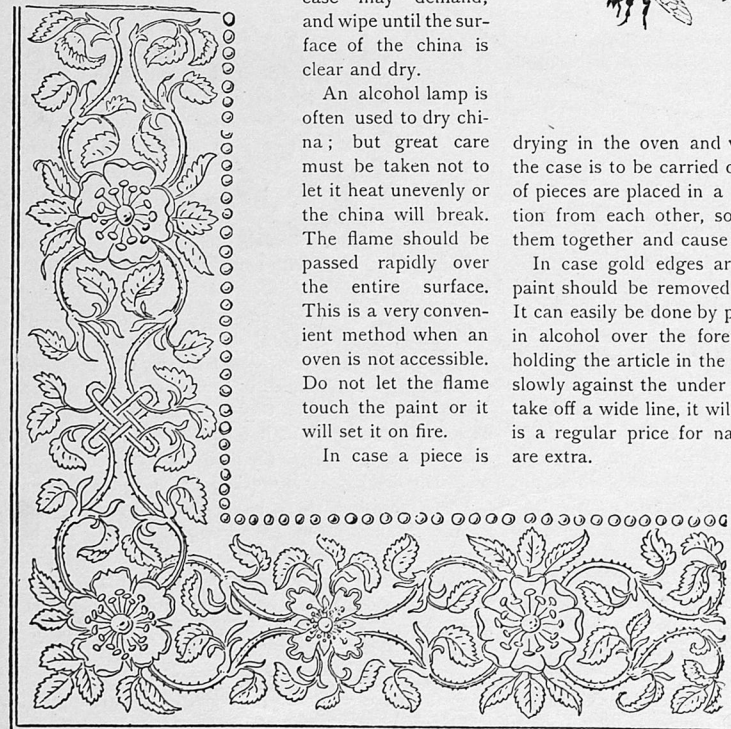
What a good thing it would be if every one would put either an initial or monogram on the back of every piece! The artist would thus be able to point with pride to her work, identified by her own mark. It is also well to add the date, and so be able to note the improvement one has made from time to time.

M. B. ALLING.

ETCHING ON CHINA.

A SIMPLE small design should be selected for this purpose, such as a Roman key pattern, a row of dots or a small vine. Cover the design with a thick coat of asphaltum; draw a band on each side, leaving only the background to be eaten. Cover as much of the article as is necessary. If the edge of a cup is to be etched, the inside should be protected as well as the outside. Put the acid on the parts of the design that are left white and let it remain until the glaze is well eaten off. Apply the acid as often as necessary. When it is eaten enough, remove the asphaltum as directed. Cover the design with gold. After it has been fired rub over with the glass brush. Burnish the raised parts and bands. Very rich and delicate work can be done in this way. If the inside of the cup is well protected with wax it can be turned upside down in an old saucer and given an acid bath. Pour a little acid into the saucer and fill up with water until it reaches the top of the design. Let it stand till eaten. It saves time to use this bath. Saucer and plates can be covered with wax and then filled with the bath, and so eaten out.

In the flight of tom-tits (p. 100) use ivory and mixing yellow for the breasts, shaded with brown green and pearl gray; for the heads, tails, and flight feathers rich blue shaded with raven black. For the backs take deep chrome green and shade with brown No. 4 and black. Around the eyes put a little white enamel.



PAINTING IN BOUCHER STYLE.

I.

SIMPLE directions for flesh painting on china have been asked for by several readers of *The Art Amateur*. In meeting these requests, I cannot do better than base my suggestions on the beautiful designs after Boucher, entitled "The Elements," now appearing in the magazine, the third of the series being the frontispiece of the present number.

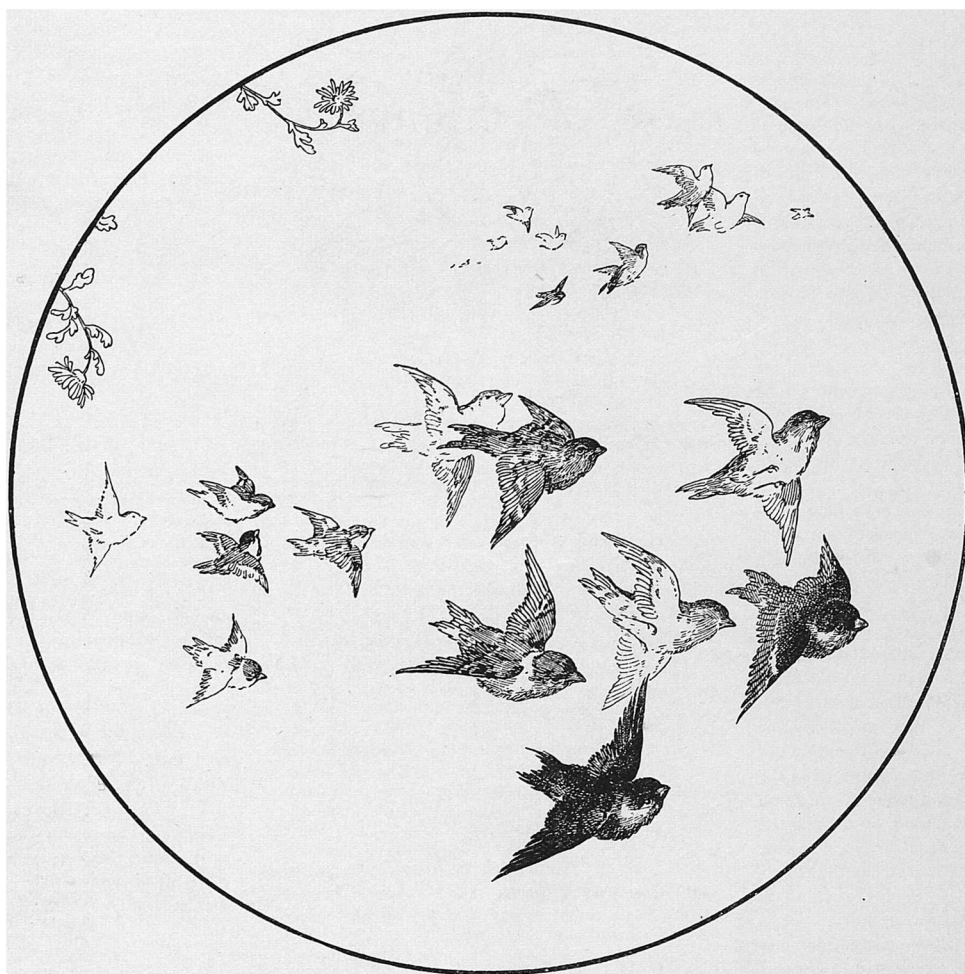
A few suggestions for utilizing these designs may be acceptable. They are, of course, obviously suited for plaques, and, for this purpose, can be taken singly or in pairs, supposing the entire set is not needed. They would make charming centres for tall, straight jars for pot-pourri, with trailing garlands thrown carelessly over the rest of the plain surface. The study of wild roses given in *The Art Amateur*, November, 1888 (p. 131), may be used for this purpose. With a little ingenuity the twisted stalks can be formed into a kind of framework for the picture. Another way would be to place each medallion between sprays of single flowers, such as pansies, daisies, apple-blossoms or evening primroses, in semi-conventional manner, after the Dresden fashion. The groups of cupids, thus reduced in size, would look very well on ornamental vases. Renaissance ornament picked out in gold only would also make a good setting. Reduced in size, any one of these designs would be admirably suited for the top of lid of a bon-bon box, the box itself being ornamented with gold. The second and third of this series would be appropriate as centres for a pair of cake plates, suitable for a wedding gift.

Individual needs will suggest many other purposes to which these very useful designs can be put. The outlines are so clear in detail and truthful to the originals, while the shading expresses the forms and rounds the figures so beautifully that, so far as the copies are concerned, there can be no excuse for bad workmanship. This remark is made because nearly all reproductions after Boucher that are in the market are so sketchy and incomplete in detail that it is extremely difficult for amateurs to make good copies of them. The present models are excellent fac-simile reproductions of rare copper-plate engravings. The treatment I shall give for flesh painting (which will, of course, serve for all of these designs and all similar subjects) will call for two or more firings, according to the skill of the artist. The reason for this is, that if the figures are to be shaded, a groundwork must be laid and fired before the painting is worked up. Subjects of this kind are susceptible of elaborate finish, after the fashion of miniatures. When well done, in this way, the work is really valuable. Much ornamental figure decoration in mineral colors is carried out by means of flat tinting, which needs only a single firing, and is quickly done. Such treatment, however, is for sketchy work only, and is quite apart from the matter in hand.

For flesh painting I prefer to use Dresden colors only. The best results, I find, can be obtained with these. There is no objection, however, to using, in conjunction with them, colors of other makes—that is, for the rest of the picture. The Dresden colors needed are pom-

padour red, ivory yellow, blue green, dark blue, yellow brown, chestnut brown and Brunswick black. These cost a little more than ordinary colors in the beginning, especially Brunswick black, the price of which is 70 cents; dark blue and light blue green are respectively 40 and 45 cents; chestnut brown is 30 cents, and the three remaining colors are 25 cents each. Although the first outlay for Dresden colors is rather costly, in the long run they will be found no dearer than Lacroix colors. If kept carefully free from dust when out on the palette, they can be moistened with a little turpentine and used time after time. There need be no waste, as with other colors, which are apt to become fat and unfit for use after exposure to the air for a few days.

Having decided on the piece of china you intend to decorate, see that it is scrupulously clean; then, with a clean rag or sponge, wipe it all over with turpentine. When this application is thoroughly dry, the china will take the impression of a lead-pencil or transfer paper as easily as drawing paper will, which will not be the case if you omit to use the turpentine as directed.



Take some clear tracing paper, and draw all the outlines carefully with a very fine drawing pen. Any India ink will do (common ink is apt to blot on tracing paper). If your India ink is in cake form, rub it down with water and fill the pen by means of a brush. Of course, you can trace the design with a fine pencil; but greater accuracy and clearness will be obtained with pen and ink, especially as when finished, the tracing should be reversed and gone over on the other side with an H. B. drawing pencil. This having been done, place the outline pencil side next the china, and, to prevent the tracing paper from slipping, secure it in position with gum paper. Now, take a bone tracer and go over the whole drawing, using sufficient pressure to transfer the pencil outline. By this means a beautifully distinct and very delicate impression will be obtained. Colored transfer paper can, in many instances, be used with advantage; but for flesh painting a colored outline is not only confusing, but often too strong, and it does not always disappear entirely in the firing. Hence it is worth while spending a little extra time in order to obtain a fine pencil outline. Many advocate rubbing a soft lead-pencil over the back of the design, but this is

liable to smear the china and give lines too broad and strong.

Begin painting by securing the outlines of the figures and markings of the features and limbs, with a faint tint of pompadour red. Thin the color slightly with spirits of turpentine, and use a very small fine-pointed brush. This must be allowed to dry thoroughly before you proceed further.

The hair can now be laid in with a delicate wash of yellow brown all over. The depth of the tints used both now and in working up can be varied for the hair, so that the heads may not all be of precisely the same shade of gold. With yellow brown, chestnut brown and Brunswick black, any tint from flaxen to rich golden brown can be obtained. While the first wash of yellow brown is drying, make the preliminary flesh tint. Take pompadour red, and mix with it just a touch of ivory yellow. Be careful not to overdo the yellow, because, in firing, the red becomes paler, whereas the yellow rather increases in strength; so for this you must make allowance; add some tinting oil, and a very

little turpentine. Then, taking each figure separately, lay on freely a flat tint of the prepared flesh color with a full round, good-sized camel's-hair brush that will take up plenty of color. Now make the tint quite even by blending it at once with a flat-end stippling brush, sold for the purpose. Do not mind if, in blending the color, you go beyond the edges; they can easily be cleaned up afterward with a piece of rag over a blunt-pointed instrument such as a bodkin. Here let me advise the keeping of a set of brushes especially for flesh painting. One may thus avoid all danger of muddy tints. While the first tint is still wet the broad shadows must be worked in. For this reason only one figure at a time must be started with the first flesh tint. For the shadow color, mix blue green and yellow brown with some of the flesh color already prepared; lay the shadows in carefully, referring constantly to the copy; afterward blending them with a stippling brush. Make for the wings a pearl gray by mixing Brunswick black and dark

blue. Lay in the broad shadows of the hair with chestnut brown in the half tones. Introduce a little of the cool gray. Touch the nostrils and darkest markings of the lips with pompadour red, to which add a little black; touch the eyebrows delicately with a little chestnut brown. For blue eyes, mix dark blue with light blue green; for the pupils, take brown and black.

When the shadows on the flesh are dry, the darker parts may be accentuated by going over them with the colors before used, and a very little cool bluish gray may be introduced into the half tones. The first painting is now complete, so far as the figures are concerned. Be sure that every part is worked up to about the same degree of finish. The coloring must be kept delicate, in order to allow for modelling up and finishing touches after the first firing. Attention must now be given to the background and other details, since it is necessary to secure in color every part of the drawing before the first firing.

EMMA HAYWOOD.

(To be concluded.)

A SCHEME of color for the above design for a plaque will be found on the preceding page.

NOVELTIES FOR DECORATING.

THERE is an excellent assortment of dessert, tea, and fruit plates in French china now on the market. Among the finest and most costly are those with open-work edges, which are a great improvement on the old designs in the same style. The most reasonable of these, and therefore a little coarser in texture, represents a lace pattern; it comes in one size, measuring outside $8\frac{3}{4}$ inches, leaving inside a space of 6 inches for decoration; price 65 cents each plate.

Another design, coming in two sizes, with an interlaced edge, gives respectively 5 and 6 inches inside for decoration; prices, 60 and 75 cents.

Plates of a novel and exquisite Dresden pattern cost \$1.25 each. The edge of the plate is festooned and perforated in a simple pattern suitable for ornamenting in gold. There is no shoulder, as is generally the case with open-work edges, and therefore a much larger space is left for decoration; the plate is 9 inches in diameter. This pattern would serve as a card-plate, or to hang against the wall on a dark mount, as well as for table purposes.

A charming and very uncommon dessert and fruit set is made with a fine interlaced basket border with a plain band on the outer edge about half an inch wide; the effect, when decorated, is charming. The service consists of round cake-plates, $11\frac{1}{2}$ inches; space for decoration $7\frac{1}{2} \times 5\frac{1}{2}$ inches; round fruit-plates in two sizes, inside measurements 5 and 6 inches; square fruit dishes $7\frac{1}{2}$ inches, $5\frac{1}{2}$ inches. Smaller round dishes, inner space $4\frac{3}{4}$ inches, for crystallized fruits and bonbons, and a small, boat-shaped dish also for sweets. Any of the pieces can be bought separately. The dishes would make charming card-baskets.

Another very pretty shape comes in one size 9 inches in diameter. The edge is festooned and formed of shells, which can be decorated to accentuate the pattern. There is no shoulder, and therefore there is ample space for a large design. The surface of this plate is very fine and highly glazed. The price is only 60 cents.

Cheap but good plates in French china, with festooned edges, ranging in size from 5 to 9 inches, can be had from 20 to 35 cents, with platters to match if required.

A very pretty dinner service—the pieces to be sold separately—comes in a square shape, with shell corners and embossed fancy edges; plates in three sizes, $5\frac{1}{2}$ inches, 7 inches and 9 inches across. Price from 25 to 45 cents. The platters range from \$2.25 to \$5.75 for the long fish platter. In addition to the usual soup-tureen, sauce-boats and butter-plates, there is a novelty added—an ice-cream platter, flat, to hold about a three-quart brick, or it would serve for a game dish. Price \$3.50.

A great variety of butter-plates is shown in all devices; shells of various kinds, fluted and plain; other shapes plain, with fancy edges, either round or square. The square ones with a bamboo edge are pretty. One plate is shaped like a morning-glory leaf. What could be prettier than to decorate it with its own flower? The butter-plates cost from \$1 to \$1.25 the dozen.

An ice-tub, in three pieces, with drainer, measures $6\frac{3}{4}$ inches across, and costs \$2.50. It is fluted and quite new.

A cheese-dish, costing \$1.25, presents a perfectly plain round surface for decoration, diameter 6 inches; it consists of three pieces, a plate, dish and lid with handle.

A new jar for small biscuits, in three pieces, costs only \$1.50, and presents little difficulty in painting it. It is quite plain, with a handle on the lid. The jar stands $4\frac{3}{4}$ inches high; it is shaped like a cylinder; the diameter is $4\frac{1}{2}$ inches.

All the above-named articles, together with a large assortment of other patterns, were seen at M. T. Wynne's, New York.

Among the novelties in china for decoration, imported by A. Sartorius & Co., New York, are the following:

Little French figures, on various shaped articles, both ornamental and useful, fashioned after the modern Dresden style. The figures are not difficult to paint, because the colors do not need shading.

A pair of ornaments, with perforations, to hang against the wall, each $10\frac{1}{4} \times 8$ inches; price, \$6.30 the pair. They are in the form of a flat shell, with a full-length figure on each of a boy and girl made to face each other. The figures are placed on one side of the shell, so that there is ample space for painting on. Such a design as the study of sweet peas, by Victor Dagon, given in the September number, would be suitable and could easily be adapted.

Another pretty pattern is called the Swan plate; it comes in two shapes, oblong and square; the oblong measures $8\frac{1}{2} \times 5$ inches, the square 7 inches; prices, \$2.90 and \$2.70. The design consists of a boy placed on the outer edge, with swans on either side of him. The space in front is intended for decorating. The edge is raised in Dresden relief ready for coloring. This ornament would serve for a card or pin-tray. Others, in somewhat similar style, are shaped in ovals and triangles. One, representing a figure chasing some ducks, is full of action; price, \$3.60. Yet another, a pocket-shaped stand, to hold flowers

or sweets, has a boy, with bagpipes, perched on the top; price, \$3.40.

Card-holders, with the space for decorating in front (measuring about four inches), and made to look like folded paper, are useful and pretty, costing only \$1.15 each.

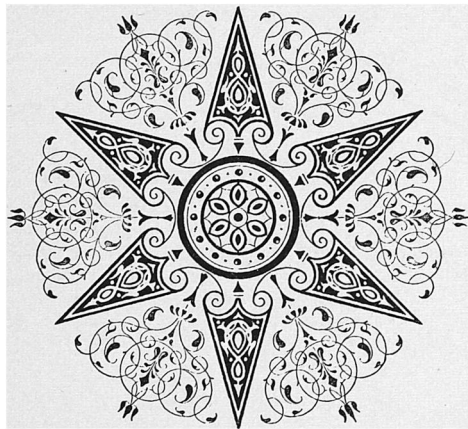
Some conical wall-pockets, tied with raised ribbons, measure 9 inches in front and cost \$2.25.

Suitable as a gift to a gentleman is an inkstand in the form of a begonia leaf, $11\frac{1}{2} \times 7\frac{1}{2}$ inches at the broadest part. On the broad end, apparently crawling on the leaf, is a huge beetle, which forms the lid to a good-sized inkpot sunk into the leaf, the graceful curves of which entirely conceal it. This novelty comes in French faience and costs \$2.50. The leaf forms a pen-tray, and could be decorated to represent any variety of large begonia in natural colors; but any other design suited to the space would serve.

Receptacles for fruit, sweets, cards, flowers, etc., come in two sizes in the form of deep shells with waving edges, measuring respectively $11\frac{1}{2} \times 9$ inches and $8\frac{1}{2} \times 6$ inches across the top; prices, \$2.70 and \$1.35 each.

An oval shell-shaped pin or card-tray in faience measures $9\frac{1}{2} \times 5\frac{1}{2}$ inches, and costs \$1.15.

A quaint pin or ash tray ($7 \times 5\frac{1}{4}$ inches) represents a map of France, the lines being indented ready for coloring; the spot oc-



cupied by Paris is indicated and the word could be written in gold. In one corner is the seated figure of an Englishman studying a guide-book, his umbrella on the ground beside him.

A pretty conceit in faience is a tambourine, 8 inches in diameter. The fixtures to be added after the firing are included; price, \$2.70. This affords a good chance for utilizing many of the charming floral designs given in The Art Amateur for plates, or the flight of birds given on the opposite page. For more ambitious work some of the heads by Ellen Welby would be charming; or, slightly reduced, one of "The Elements," after Boucher, now in course of publication; not to mention numerous designs of cupids and birds given in back numbers of the Magazine.

In bonbonnières there are three shapes and sizes; a round one for the pocket might have been made expressly to fit the dainty design given on page 43 last July, or to take in any one of the dozen little designs for butter-dishes on page 98, or the insects on page 99 of the present number. Other bonbonnières are larger; one of them oval, the other oblong and square at the corners. These are of sufficient depth to need decoration at the sides as well as on the lid; they cost \$2.70 and \$3.60 respectively. The framework can be removed easily for painting and replaced after firing.

A casket, also mounted in an ornamental gilt framework, is very suitable for a wedding gift; it comes in exquisitely fine French china, and costs \$9.90. The lid measures $5\frac{1}{2}$ inches on the flat surface, but is an inch in depth, the edges being rounded off. The part of the box visible for decoration is a plain band $1\frac{1}{2}$ inches in depth. One could find nothing more suitable for decorating the lid of this casket than a design given in The Art Amateur, August, 1888, on page 71, which happens to be about the size required. The vine border would decorate the depth of the lid beyond the rounded edges. A group of small cupids on the top within this framework of leaves and grapes would be charming.

THE "AFTERNOON TEA" SET.

THE treatment here should be as simple as possible. There should be no shading—flat tints only. For the flowers use

two shades of salmon pink. For these take Capucine red, used thinly, but remember that this color has a tendency to fire somewhat paler than it appears when applied.

For the green leaves and stems take apple green; then, when the color is dry, outline and vein them with sepia, to which add a little red brown. Outline the flowers with red brown. Put the centres in with yellow Dresden relief, so that the little dots are raised.

Tint the lower parts beneath the bands on which the flowers are painted with café-au-lait, which, as its name implies, is a beautiful deep cream-color. Tint also the lids, the handles, the centres of the saucers and the plain space on the tray with the same color. When the tint is dry, trace on the design wherever it appears and scrape the tint off within the lines; then color it as already directed. Wherever the darkest bands or forms appear, put them in with gold; also the markings and dots between the flowers on the cups, saucers and the centre of the tray. All the narrow bands and the edge and base of each article must also be put in with gold.

One firing should suffice in skilful hands. If two firings are given, paint the spaces allotted for the gold with a warm brown, such as yellow brown; then after the first firing paint in the gold. The effect will be found much richer, even if the gold is painted more thinly than is requisite to hide entirely the white china beneath, when not previously tinted. Use Lacroix colors, or, if the smell of oils and turpentine be objected to, paint with Richardson's water-colors, which are named to correspond as nearly as possible with the Lacroix colors, and fire just about the same.

THE ORCHID PLATE SERIES.

THE present plate completes our set of twelve. If a background be desired, use a delicate wash of turquoise blue. Remove the background for the design. Wash in the leaves with grass green; shade with brown green and deep red brown, giving them a mottled effect. The flower stems should be a deep red brown, shaded with the same color. For the flowers, leave the upper petal a pure white, inclining to a creamy tint toward the centre, with pinkish gray shadows. There is a deep crimson streak through the centre of the petal, or it is often heavily spotted with crimson. The two crinkled side petals are also white but of a decidedly pink cast, while the lower lip is a rich deep crimson. Where the inner part of the lip shows, use a delicate yellow green; also the same color for the two small petals next the lip. The centre of the flower should be light green, with yellow and deep crimson markings for the lighter and darker parts.

THE CRESCENT SALAD PLATES.

EDGE each plate and outline the design with gold. Use gold also for the crescent in the centre, outlining it with brown green.

No. 9. *Mallow*: For the flowers use a delicate lavender (add a little ultramarine blue to a light wash of purple No. 2). For the rest of the design add brown green to apple green, shading with brown green. If gold is not used, outline and vein the flowers with purple No. 2, the rest with brown green. Use yellow brown for the crescent.

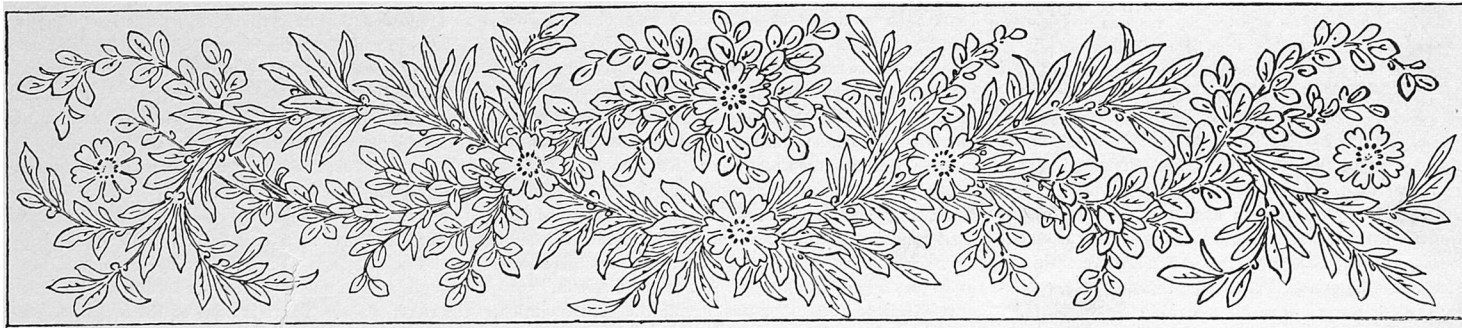
No. 10. *Sorrel*: Add apple green to brown green, shading with brown green. More color may be given by using red brown for a few of the small leaves, the stalks and portions of the larger leaves. If gold is not used, outline with red brown.

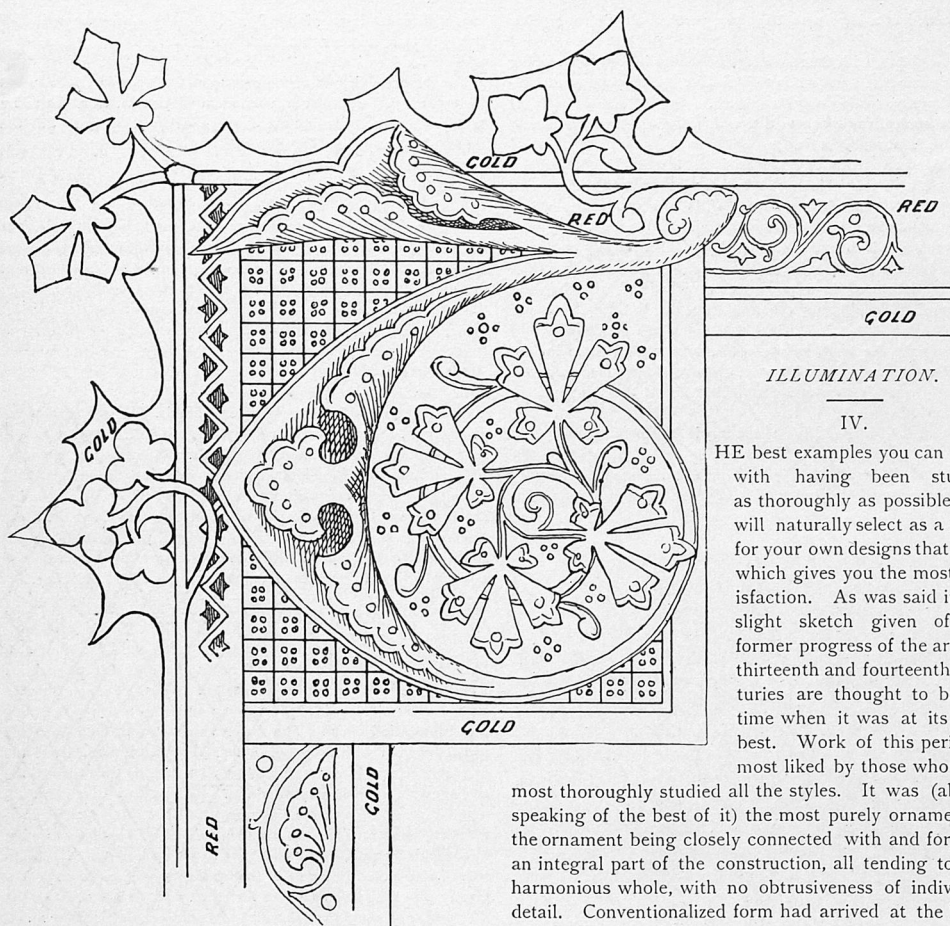
THE OLIVE DISH DESIGN.

MAKE the leaves blue green (mix very little deep blue with grass green) shaded with brown green and brown. The under sides blue gray. Flowers yellow for mixing; for the centre a little ring of carnation No. 1; the calyx gray green. The stems grass green shaded with brown green. In its natural state the fruit is an olive green shading into deep purple—very much like the coloring of an unripe plum. Put in the fruit in thin washes of brown green, shade with the same color and a mixture of deep blue and deep purple, and use a little black for the darkest shadows. The edge of the dish may be splashed with gold.

THE SMALL PLAQUE (PLATE 779).

THIS will look well in monochrome. Use brown green, orange red, old tile blue or red brown. Sketch the design on to the china and secure it in India ink. Next blend the very palest tint of the color chosen all over the plate. To thin the color add a little spirits of turpentine and some tinting oil or balsam of copaiba. While the tint is still wet take a clean brush just moistened with turpentine and wipe out the color as far as possible on the flowers only. Then, when the ground is dry, shade the design with gradations of the original tint used. When finished, touch the flowers and their centres, also the high lights on the butterfly, with white enamel.





THERE are several qualities of bronze powders in the market. None but the very best should be used, as the common makes tarnish quickly, and, indeed, are apt to turn black. Even the best bronzes cannot be warranted to keep their color. There has been quite recently a bronze powder imported that so closely resembles gold leaf that when freshly laid on it takes an experienced eye to detect the difference. Composition gold, or, in other words, imitation gold leaf, will not tarnish, neither does silver leaf nor aluminum. These, of course, cost more than the bronzes, but they wear very well. To apply either of the three, you must, when the shellac is dry, lay on some Japan gold size, and then, with a gilder's brush, put on the leaf.

In bronzing a panel of lincrusta, let us say fifty inches long, begin at one end close to the edge and leave off about the centre. Let the next stroke of the brush overlap the first; repeat this treatment until one half of the surface is covered. Then begin at the other end and do

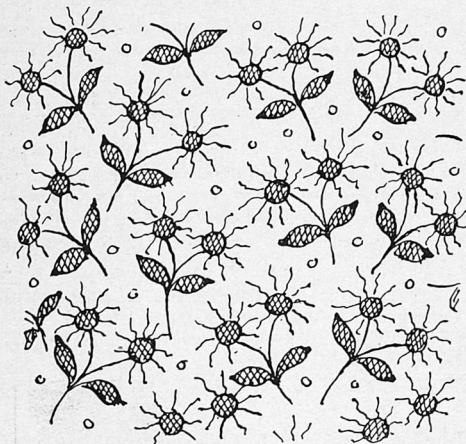


FIG. 1. DIAPER FOR ILLUMINATION. GOLD GROUND.

likewise, just overlapping the work where it meets in the centre. No join will be visible if the bronzing is properly manipulated.

Bronze powders are often used with good effect, in conjunction with oil or water-color painting, for decorating silk, satin, or bolting cloth. They are preferable to the lustre colors generally sold for this purpose, on account of their being much more durable. E. H.

most thoroughly studied all the styles. It was (always speaking of the best of it) the most purely ornamental; the ornament being closely connected with and forming an integral part of the construction, all tending to one harmonious whole, with no obtrusiveness of individual detail. Conventionalized form had arrived at the highest point of beauty and grace, and attempted realism in naturalistic treatment had not yet come to crush out ornamental art.

Certainly, it is to be understood that the best ornament is derived from the study of natural forms; but they must be thoroughly studied, digested and assimilated before they can be turned into ornament, and the source of the ornament will be suggested only to those who may study it in the same way that the inventor did. We are charmed with the beauty, which we accept without questioning its origin, as we delight in the sweetness of honey without thinking of the flowers from which it has been concocted. Mere imitation of nature, no matter how beautifully it may be done (there being no question as to the pleasure it may give), is not in any sense ornament.

When the attempt is made to imitate real objects in all their relief, with their accidents of perspective, shadows and so on, there is no natural limit to the attempt short of all possible realization. If this is carried to the extreme our immediate perceptive sense is tickled, but we lose a great deal of the deeper imaginative delight which might otherwise have been ours. Even in picture painting realization must not be pushed too far, or the higher enjoyment is whelmed in mere childish wonderment and delight awakened by the dexterity of the artist, and our pleasure is of a much more transitory kind than that which we feel when a healthy restraint is imposed, and mere matter of fact is not made to overpower the imaginative conception.

Now, ornament is purely ideal in its beauty, and to give lasting pleasure must be continually restrained within conventional bounds. If realistic imitation is brought into connection with it the two conflict instead of coalescing, the feeling of unity and repose is disturbed and the suggestive charm of true ornament is destroyed. Pure ornament is incompatible with pictorial representation, for the reason, if for no other, that the latter is to be looked at and considered as entirely unconnected with any surface upon which it may be executed—it is successful so far as it makes us forget that—while true ornament is to be considered as a part of that surface, and is best when it is completely identified with it, so that we think of it as inherent in the material and not to be parted from it.

Look at some of the fifteenth and sixteenth century work, over which so many of those who have not in the least considered what it is which they admire, go into ecstasies. Let us take one for example, which is shown in Shaw's "Handbook of the Art of Illumination."

It has near the top a picture of the Annunciation,

taking up about one third of the space occupied by the whole design. Beneath this are thirteen words of text. The entire design is straight sided and square, as if it might be a board or wooden panel; it is bounded by an apparent moulding of the kind which you can buy in lengths at the factories at so much per running foot. The board appears to have an opening cut in it for the picture, and this opening is surrounded by more of the same moulding. Just below the picture is a smaller panel enclosing an initial D, still bordered with the same moulding. All this moulding is carefully represented in relief, nicely mitred at the angles, and without a break in its uniformity, or anything to connect it in any artistic sense with the rest of the work, or to give it more interest than attaches to any ordinary inch moulding nailed on to a pine partition. Upon the plain surface which is left between these mouldings, and not occupied by the thirteen words of text, are disposed sundry objects: in the centre at the bottom a peacock with his tail spread; at the right of him, a vase with lilies growing out of it up the side of the page, with two butterflies hovering about it, one of them being ingeniously constructed with one pair of wings attached to his thorax and the other pair to his abdomen—probably in order that he may more conveniently fill the station to which he has been called; two caterpillars and sundry scraps of more or less impossible plants, some not growing from, but sticking into the ground, and others scattered at random on the plane surface, without visible support, as though they were held by magnetic attraction, or as if the board was supposed to be horizontal when you looked at those particular scraps, and they would therefore lie quietly upon it. The size of each object seems to be governed entirely by the room there is for it, so that hardly any two things bear any natural proportion to each other.

This is absolutely all. The different objects are scattered about as if they were scrap pictures scissored from various places and laid about on the page until they comfortably filled it. But they are all worked up with the nicest finish of miniature painting, and the



FIG. 2. DIAGRAM FOR ILLUMINATION. GOLD GROUND.

shadows they cast on the board have been carefully studied to express that it is a board or solid surface, and that they are detached from it. Shaw says of this performance that it has great harmony of coloring and exquisite blending of the most delicate tints.

For judging this as fit and adapted to illumination, we will leave out of question all the errors of execution in it, all the ludicrous drawing of impossible objects, and suppose that everything represented is done with accuracy, and that the forms are as exquisite as the coloring is said to be; it is still unworthy of the name of design. It is understood that the picture itself is not referred to, but the border—what is intended for ornament. There is no thought or study, nothing like "design" or plan in it. It is entirely fragmentary and without connection or unity; any part of it might be removed without injury to the rest, and if it were required to cover a page of twice the size nothing more would be necessary than to move the moulding out far enough and to put enough more scraps on it to fill out the extra space. There is none of the artistic repose in

it which comes from arrangement and subordination, and since imagination is cast aside and the representation of actual physical facts is depended on as the only source of interest, the mind is troubled as to the reason for these things being in the places where they are, as also regarding the power which keeps them there.

There are those who take pleasure in mere imitative repetition, which requires no exercise of the mind, and such may go on adding scrap to scrap indefinitely with much satisfaction to themselves. It is a very pretty amusement, disturbing no one's piece of mind, and as an artistic pursuit is, perhaps, quite up to the level of piecing together crazy quilts. It may be dismissed from further consideration as having anything in connection with the art which we are studying.

The first thing to be thought of in illumination, the real starting-point, is the matter to be decorated—the text. It seems curious that it should be necessary to

say this, but experience shows that many think it a matter of little importance. Experience also shows that such thinkers are quite mistaken. In all the best work it is gravely and firmly set forth so as to support and give value to its ornamentation. If it is merely a text of a few words, to be displayed on a wall, let all the letters

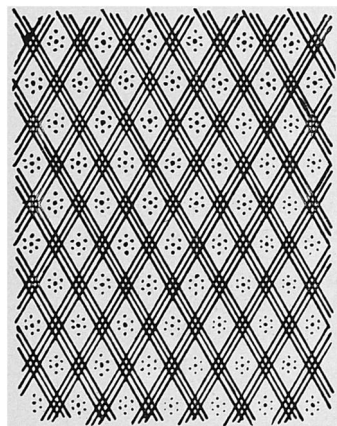


FIG. 3. DIAPER FOR ILLUMINATION.
GOLD GROUND, RULED AND DOTTED WITH THE BURNISHER.

except the color be uniform in character and color, and the color subordinate to that of the more ornamental portions: not as we sometimes see where the effort is made to have everything alike gorgeous, where every part seems struggling for supremacy, and the result is naught. If it is an ordinary page with a body of text consisting of many lines, nothing is so good and effective as a full clear black. The letters should be legible and simple in form, and the whole solid and even from general uniformity of lines, whatever may be the style adopted. It should not straggle nor be in any way fantastic, but should be soberly arranged, so that its squareness and solidity may serve as a basis in which the ornament shall take root, and from which it may with security spread and flourish in all its luxuriance, branching forth in graceful curves and blossoming into beauty and sweetness of color.

Lettering is an art in itself, requiring much practice to master. Long study is profitably bestowed upon it by those who make it their profession, and you need not be astonished nor disappointed if you cannot succeed at once in what may seem to you a minor part of the work. If you do not find yourself able to do it well, it will be better that you should employ some one who makes it a business. Sometimes in a work of importance it is even well to have the text printed. You may be certain that unless it is well done it will entirely spoil the beauty of your design. The finest ornament would be vulgarized by slovenly text.

As regards the style of letter to be used, there are at the present day so many different forms which may be met with in print, that you will have little difficulty in finding some alphabet to please you. It is not essential that it should be what is called "Old English," or "Church Text," or "Black Letter." This last, when very well done, certainly seems to harmonize with illuminated work better than most other letter; but even ordinary written text, if it is kept close and black, like what is called "engrossing hand," for instance, is better than ill-understood, awkward imitation of medieval text. To sum up this part of the subject, let your text be legible, as aforesaid, and of such closeness and uniformity that it may furnish a sufficient body of black to give the page a square and substantial appearance.

Having chosen the style of design and of lettering which you may prefer, proceed as follows: Stretch on the drawing board a sheet of paper of proper size. Fix

upon this the size of your whole design, and also the boundary of the text by lines drawn with the T-square;

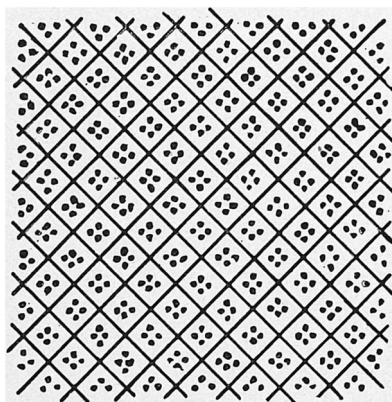


FIG. 4. DIAPER FOR ILLUMINATION.

BLACK GROUND, RULED AND DOTTED WITH WHITE, GOLD, OR VERY LIGHT BLUE; OR PURPLE GROUND, RULED WITH CRIMSON LAKE, AND DOTTED WITH PINK OR SCARLET.

divide the latter space exactly for the lines of lettering. Sketch in the text, to show where the spaces must be left for the initials and ornament. Having all this established, go on and sketch the design as it may be supposed to exist in your mind. Begin with the main features—the principal forms—first, altering, moving and arranging the lines until they seem right, and gradually filling in the minor details, and continue altering, erasing, redrawing and arranging until the whole satisfies you. Do not fear labor in this part of your undertaking. Every designer has to do this, and in many cases more time is spent in these preliminary trials than in doing the work when it is finally settled upon and decided.

In this first drawing every important form at least should be made out accurately and truly, with a firm outline, so that no alteration will be necessary after it is transferred to the final surface, and that this may be kept pure and unfretted by erasures. There may be some small matters, such as diapers, which need not be drawn until you come to the finished work, but you should have them all fixed in your mind before you begin coloring. When you think you can do no more to improve your design, make your tracing, watching all the time for any opportunity to make a curve more graceful or to help the arrangement and balance of parts by slightly changing any of them.

Having your paper or board prepared for the final illumination, transfer and fix your drawing as has been already explained. Now complete the text before beginning to color. This not only obviates the danger of spoiling any of your delicate work after it is done, but having the text, which cannot be modified, first fixed,

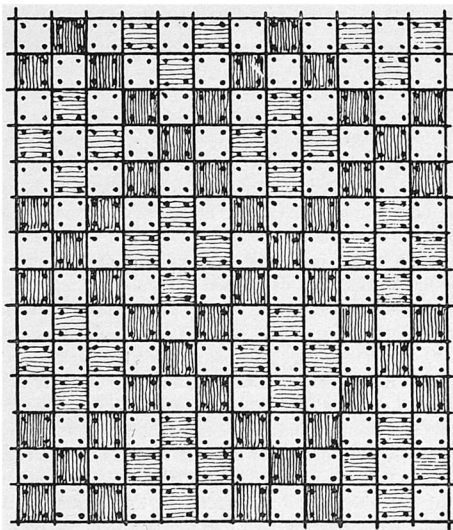


FIG. 5. DIAPER FOR ILLUMINATION.

THE WHITE SQUARES ARE GOLD; THE LIGHT LINED ONES BLUE; THE DARK ONES RUSETT RED.

you can fit the ornament to it more easily than would be possible by reversing the proceeding.

For those who, without being familiar with the technical forms of lettering, still desire to do their own text, a few practical hints may here be given. Suppose it is the "Old English" style of letter which you are going to attempt, although the same plan will answer for any lettering. Having, as before said, fixed on your sketch the position of the lines of text, rule for each of them two pale ink lines for the height of the main body of the letters. Then with a hard pencil rule the whole space with fine perpendicular lines a quarter of an inch or so apart; these are simply to guide you in keeping the letters generally upright. Now go on and draw your letters with a soft pencil, attending first to the heavy up and down strokes, until you have a word sketched; then

join these by the lighter lines to make the letters complete. Go on thus to the end of the line, keeping it as regular and uniform in spacing as you can. Sketch the whole page in this manner. Your lines will naturally come out of unequal lengths, since you cannot divide a word except on a syllable. Lay a piece of tracing paper over the sketch and rule pencil lines on it for the boundary of the text, and

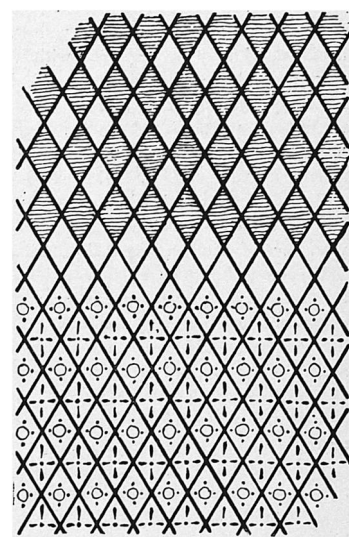


FIG. 6. DIAPER FOR ILLUMINATION.

GOLD AND DARK BLUE LOZENGES; THE GOLD WITH RINGS AND DOTS MADE BRIGHT WITH THE POINT OF THE BURNISHER, AND THE BLUE WITH A WHITE FLOWER OR CROSS; THE WHOLE RULED WITH BLACK.

also the horizontal lines for the lettering. On this you will bring your lines into uniformity by moving it backward and forward as you trace, making a little more or a little less space between the words, and, if necessary, making some of the letters themselves a little wider or narrower, until the lines are of equal length and the whole body of text as square and solid as a printed page.

This is supposing that it is ordinary reading matter—prose—that you are doing. If it is verse, of course you are relieved from the necessity of making the lines all of a length; but you will go through the same process in order to get the letters and words uniform in spacing, and not to have any straggling or crowded parts. It seems a very laborious way of doing what appears to be a simple thing, but it is the best way, and it pays in the end. When you do your tracing on the final work, you have one more chance to adjust and regulate the spacing by the same method. In finishing the letters here it will be well to rule very faint horizontal pencil lines to keep the letters uniform in height. For inking in, use India ink rubbed up thick with a little lampblack, if it is not deep enough without. Slight rubbing with bread crumb will then erase the guiding lines.

It is also generally better to put on any important masses or surfaces of gold before coloring, not only because it can then be more easily and safely burnished, but also because in case you do not finish your work with a black outline, the color can be laid more neatly and sharply to the gold than the gold to the color. Should you desire a large gold ground with delicate line work like small leaves, stems or tracery of any description upon it, there is supplied among other materials a very thin paper covered with gold leaf, the back of which being gummed may be attached to your paper in as broad surfaces as may be necessary, and the painting done upon it. There are many difficulties in working on it, and it is not recommended for illumination of the finest kind.

The manner of laying on the color has already been described in the directions for copying. You have now to choose and arrange color for yourself. In this matter of choice very little instruction can be given. Your own natural taste, cultivated and improved by study of what is good, will be your safest guide. There are various numerical formulas promulgated, which are quite good

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TALKS WITH BEGINNERS.

IX.—PRINTING ON PLAIN PAPER.

study when you have got beyond the necessity for them; until that time they are quite as likely to bewilder you as to be of any service. In the present state of knowledge regarding color, we can do better by trusting to the judgment of the eye, than by attempting to follow out any theory. If color looks well it is right. Of course, with practice and study you will improve—become more artistic and refined—in short, know more. In the mean time, there are certain facts well established by experience, some of which may be here set down for your guidance.

As a general rule, let the ornaments appear lighter than the background, unless this latter is of gold. A gold background may be left plain and dead, or burnished; it may be enriched by bright lines, filigree work or dots, by means of the burnisher; or it may be figured in the same style with lemon yellow. A dark green background may be enriched with the same kind of work in gold or in lighter green. A blue ground may have any enrichment painted on it in lighter blue. Let the light blue tend to a greenish rather than to a purplish hue. It may also be diapered with black lines, either in lozenges or in squares, laid horizontally or diagonally, with dots or flowers in the centres, either white or light blue. A purple or russet-red ground may be diapered with lines of crimson lake and dotted with scarlet.

Diapers are innumerable in their variety. They may be of one color, or of one color and gold, or of two colors and gold, as a groundwork for the ruled lines, but they must always be so designed as to form, size and color, as to allow the ornament in front of them to appear distinctly, not being lost or muddled in the work behind it. A few forms are here given to serve as examples of what may be done.

The diaper, Fig. 3, may be made with alternate light blue (cobalt and white) and white lozenges, and the lines ruled broadly with gold; or it may be of a little darker blue alternated with gold, and ruled with black. B is made with gold and dark blue lozenges, the gold with rings and dots made bright with the point of the burnisher, and the blue with a white flower or cross, the whole ruled with black.

Fig. 5 may be entirely blue ground ruled with black and dotted with white, gold, or very light blue; or purple ground ruled with crimson lake and dotted with pink or scarlet.

Fig. 4 is intended for a gold ground ruled and dotted with the burnisher, but may be of varied colors like the others.

Fig. 6 represents a peculiar class of diapers, which require a certain amount of space to show them to advantage. In the present example the squares which are left white represent gold, the light horizontally lined squares a rather dark tint of French blue and white, and the dark perpendicularly lined squares a russet red made with India red and carmine. The dots in the corners are a greenish turquoise blue on the blue, pure orange vermillion on the red and on the gold dots impressed with the burnisher until they sparkle. This diaper, when fairly shown, has a kind of changeable quality—iridescence it might be called—which gives great value to the more boldly-colored ornament which may come in front of it. When you use a diaper of this kind there must be open space enough to show it, so that the eye may readily perceive the whole pattern, and that the varying colors may have their due effect.

Figs. 1 and 2 are primarily intended for gold grounds figured with bright lines, although they may be executed in gold lines on any colored ground, and also in a lighter tint of the same color as the ground. The end to be sought in diapering or damascening of this kind is, that the ground shall be so closely and uniformly covered, that individual forms in it, although graceful in themselves, shall not be prominent, and that the whole shall form a rich background of fluctuating color and light, to set forth the more important objects. Delicate but lively contrasts of this kind stand high among the charms of illumination, and to the cultivated taste give pleasure corresponding to that produced by atmospheric effects in a picture.

C. M. JENCKES.

[To be continued.]

AMONG the useful instruments which most designers seem to ignore is the compass with three points. It serves to transfer at once the three angles of a triangle, or three points in the circumference of a circle, from which the centre may at once be found by a well-known method. By the proportional compass all the trouble of enlarging or reducing a given design is avoided.

obtained by toning in a mixed bath made by two ounces of hyposulphite of sodium in one pint of water, adding two grains of chloride of gold dissolved in one ounce of water, and twenty grains of silver also dissolved in one ounce of water. The prints are left in this bath until they assume the desired tone, having been previously well washed. After a thorough washing they are ready for mounting.

Rough surface paper will be improved by a three-minutes immersion in a ten-grain solution of gelatine, with the addition of a few grains of chrome alum. This fills the pores and keeps the image from sinking into the paper.

Bertrand's and Cooper's formulæ for plain paper are also well worth trying. Bertrand recommends that the paper be immersed for three minutes on the following bath:

Alcohol.....	20 ounces
Benzoin.....	2 "
Chloride of cadmium.....	1 ounce.

Cooper's formulæ is as follows:

Frankincense.....	200 grains
Gum mastic.....	160 "
Chloride of calcium.....	150 "
Alcohol.....	20 ounces.

The last two formulæ render detail with greater richness and delicacy than the more usual method given above.

A good toning bath for prints on paper so prepared is made by dissolving one grain of chloride of platinum in sixteen ounces of water, and neutralizing the solution with carbonate of potassium. Just before using, one half a dram of formic acid is added, and the bath used at once. This bath gives strong black tones.

W. H. BURBANK.

EXPERIMENTS WITH PLAIN PAPER.

MR. EDWARD REAMING'S experience in the use of plain paper is given as follows, in his own words: "The paper that I have found most suitable for general work is known as plain Saxe paper, Rives No. 74. It is first salted by floating on, or immersing in a solution of chloride of ammonium in water, the strength of the solution being from 8 to 12 grs. to the ounce, or a mixture of the chloride of sodium and ammonium may be used; it is then hung up to dry, and can be silvered as soon as dried, or be kept for any length of time before silvering. The silvering can be performed on the ordinary bath, or a special strength of bath may be used for special negatives, or a silver bath of the ammonia nitrate of silver may be used. The paper is then hung up to dry as before, and in the case of the ordinary silver bath the paper can be 'fumed' before printing. In this stage the paper will keep good for three or four days, if excluded from light, the ammonia nitrate paper spoiling soonest. After printing it is toned in the ordinary manner, or with special toning baths, or may be fixed without toning, each process having its individual peculiarity of result. If unsized papers are used, it will be found best to size them before salting, or they can be salted and sized in the same bath. Gelatine is frequently used for this purpose, also Iceland moss and various resins. While I have tried several different salting and sizing solutions, and also various toning baths, I have made special experiments in the use of different papers, such as varieties of Japanese parchment papers, Japanese tissue paper, Whatman's drawing paper, the paper that is used for bromide prints, and even the common cardboard mounts themselves, each paper giving a different result, so that you have at your command an almost infinite variety of tones and effects. To begin with the plain Saxe or Rives papers: The paper was salted in a bath containing 12 ozs. of the chloride of ammonium to the ounce of water; then silvered in a bath containing 40 grs. of nitrate of silver to the ounce of water, and toned in a bath composed of the carbonate of soda, 50 grs., phosphate soda, 62 grs., chloride of sodium, 30 grs., water, 32 ozs., with gold from 10 to 15 grs., the result, as you see, being from a purple tone to a warm black. Other specimens were salted and silvered in the same manner as the first, but were toned with platinum. I tried at first some of the published platinum-toning formulæ, but although I obtained some good results, they were so irregular that I tried to devise a formula of my own, and found one that to me seems perfectly satisfactory. It is composed of platonic chloride, 1 gr., and 16 ozs. water, neutralized with potassium carbonate, and one half to one dram formic acid added. If the toning is carried far enough a fine platinum black is the result, warmer than the platintype; if not carried so far, a sepia results which is admirable for some subjects. In all these manipulations with plain paper, overtoning is to be avoided, as a flat print is always the result. The toning with platinum has this to recommend it, it is the cheapest form of silver printing with toning that I know of—cheaper than gold. I have successfully toned two 18x22 sheets of paper with one grain of platinum, although usually I allow one grain to each sheet. I noticed that the plain silver bath gives warmer tones, the ammonia nitrate giving a bluish black. One of the prints from the ammonia nitrate bath I toned with acetate of lead with the result of a warmer tone." Mr. Leaming is confident that the plain paper prints are reasonably permanent, and he says he knows of a number of instances of prints made from twenty to thirty years ago which show no signs of fading.

THERE are many to whom the gloss of an albumen print is distasteful, and who find bromide paper somewhat too expensive for general use. For such, a return to the old method of printing on plain paper is recommended. There is a softness and richness to these prints which make the process well worth a trial. It is free from many of the ills that albumen paper is heir to, and personally, I confess, to a preference for prints on plain paper for general work. The paper can be procured ready salted from any dealer in photographic goods; that prepared by Morgan or Clemons is good. Salted paper needs only to be sensitized and fumed to be ready for printing. The paper is sensitized by floating for one minute on a forty-grain bath of nitrate of silver; it is then dried and fumed twenty or thirty minutes.

It will be found that thin negatives are not well suited to the process, since it has a tendency to lessen contrasts. For this reason only plucky negatives of good density should be selected when plain paper is used. Very dense negatives may be printed from in full sunlight, but as a rule it is better to print under ground glass or in diffused light. The printing must be carried very far if dark tones are desired. Print until the detail is almost obscured and the shadows well bronzed.

When the printing is done the prints are thoroughly washed to remove the last traces of silver. They are then ready for the toning bath. Almost any good bath will give satisfactory results with plain paper, if care be taken to make it up much weaker than when albumen prints are to be toned. The plain paper tones very quickly, and over-toning must be carefully avoided. A good bath is made by dissolving ten grains of bicarbonate of soda in sixteen ounces of water, and adding one grain of gold. The bath should be made up an hour or two before it is to be used, but it must be used the same day it is made. The prints are toned and fixed like albumen prints, but the after washing need not be so thorough.

This is the simplest method of making prints on plain paper, and if the capabilities of the process ended here, it would hardly be worth while to call attention to it. But if one is willing to take the trouble to salt his paper, he can produce beautiful prints on almost any paper of good texture, and in this way produce a great variety of charming and unusual effects. The only conditions to be observed are that the paper be not too bibulous, and that it be tough enough to stand the much soaking to which it is of necessity subjected. Drawing, crayon, Japanese, writing and other papers, and even thin cardboard, can be salted, sensitized and printed.

The salting is done by floating the paper upon or immersing it in, either of the following baths for three minutes:

1. Gelatine.....	100 grains
Chloride of ammonium.....	100 "
Chrome alum.....	5 "
Water.....	20 ounces.
2. Gelatine.....	100 grains
Sodium chloride.....	100 "
Sodium carbonate.....	200 "
Water.....	20 ounces.

No. 1 gives purple black tones and No. 2 sepia and dead black, according to the depth of printing and the duration of toning. Citrate of sodium may be substituted for the carbonate if desired.

If the paper is floated it should be marked on the wrong side and well dampened to avoid curling up. If it is immersed, care must be taken to break all adhering air bells.

When dry the paper is sensitized on a forty-grain bath.

What is known as the ammonia-nitrate of silver bath seems to give the best results with plain paper. This is made by dissolving nitrate of silver in water in the proportion of fifty grains to the ounce. One third of the solution is set aside, and to the remainder strong ammonia is added until the precipitate that formed is redissolved. The remaining one third is then added and well mixed, bitric acid is then added, drop by drop, until the brown precipitate of oxide of silver is nearly all redissolved. The bath should now test alkaline with litmus paper, and is ready for use. Paper floated on this bath requires no fuming, and if printed deeply will give black tones without any toning. Better results are